

MONKS (G.H.)

*A Method for Applying Pressure
to the Seat of a Fracture,
For the Purpose of
Bringing the Bony Fragments into Accurate
Apposition and Retaining them there
until Consolidation has
taken place.*

BY

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*Reprinted from the Boston Medical and Surgical Journal
of July 20, 1893.*



BOSTON:

DAMRELL & UPHAM, PUBLISHERS,

283 WASHINGTON STREET.

1893.

S. J. PARKHILL & CO., PRINTERS
BOSTON



A METHOD FOR APPLYING PRESSURE TO
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BY GEORGE H. MONKS, M.D.,

Surgeon to Out-Patients at the Boston City Hospital.

On January 25th, L. P. H., a strong and well-built man, 35 years of age, applied at the Surgical Out-Patient Department of the City Hospital for treatment of an injury to the right forearm, sustained two days previously. An examination revealed fracture of the radius, near the middle of the bone. There was anterior displacement of the proximal fragment and posterior displacement of the distal.

On manipulation free mobility of the fragments, and bony crepitus were marked. There was considerable difficulty in keeping the fragments in position, — a circumstance probably due to the small size of the bone at this point and its depth from the surface.

Pads were carefully applied upon the arm, — one in front and one behind the fracture; and while extension was made upon the hand, a plaster-of-Paris bandage was put on over the pads, and reaching from the roots of the fingers to the bend of the elbow. At the end of six days this bandage was removed with great care and the seat of fracture gently examined. The fragments were found out of place, as before, and

¹ Read before the Suffolk District Medical Society, April 29, 1893.

there had been no apparent attempt at union. Fresh pads with anterior and posterior wooden splints were then applied, only to be removed again within twenty-four hours on account of pain caused by the pressure which it was necessary to exert upon the pads, in order to keep the fragments together.

While I was holding the fragments in place with my thumbs and fingers, and was considering what means, yet untried, would be most effective in keeping this troublesome fracture permanently reduced, I was struck with the ease with which the parts could be held in perfect apposition by the thumbs and forefingers alone, and I said to my assistants, Mr. S. Y. Wynne and Mr. A. B. Duel, that, undoubtedly, the best appliance for this case would be one in which a pressure could be brought to bear on the seat of fracture, as nearly like that exerted by digital pressure as possible.

That same day these gentlemen suggested a plan which they put into service in this case with the most satisfactory results, and it is for the purpose of calling attention to this method of theirs that I report its trial.

A turn of bandage was loosely placed about the arm at the seat of fracture, and its upper end was then held by an assistant vertically upwards, the arm being horizontal. This served as a landmark to the fracture. With his other hand the assistant made extension by gently pulling on the hand of the patient. The hand and forearm were then wrapped in a layer of sheet wadding, and a light plaster-of-Paris bandage applied. While the plaster was still soft, pressure was made at the seat of fracture with the thumbs and fingers, as is shown in Fig. 1, the forearm being kept slightly supinated. Under this pressure, which was very slowly and gently applied, the fragments which, up to this time had been out of place, could be felt to slide back

into proper position. The pressure was kept up until the plaster had hardened, when the digital depression was, of course, permanent. (Fig. 1.)



FIGURE I.

The pilot-bandage was then cut away, and the patient, who declared that his arm was more comfortable than it ever had been since the date of fracture, was sent home with his arm in a sling, and told to report the next day.

When he returned a fenestra was cut in the bandage, as shown in Figs. 2 and 3. This was done for the purpose of allowing inspection from time to time of the region of the fracture.

The pressure exerted by the depressions in the plaster appeared to have had no effect whatever in stopping the circulation of the parts, and the fragments seemed to be in perfect apposition. (Figs. 2 and 3.)

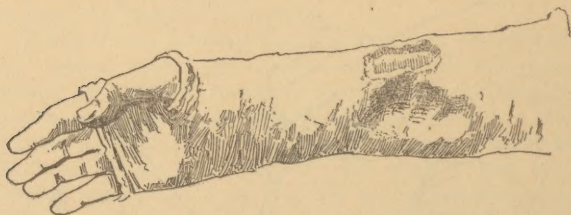


FIGURE II.

Twenty-one days after the plaster had been applied it was carefully removed and the union found to be firm and the apposition of fragments apparently exact. There was a narrow annular callus about the seat of the fracture. The plaster was re-applied, as a precautionary measure, and, in a short time, again removed,

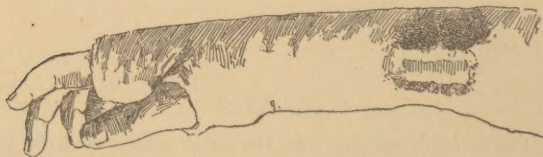


FIGURE III.

and the patient directed to use the hand. Improvement continued, and the result was in all particulars, satisfactory.

I knew that the bone would probably have united readily enough under the old form of treatment, but with these hitherto uncontrollable fragments held in

exact apposition by the depression in the plaster, I felt sure that the union would be accomplished with the minimum of deformity and the result, as it proved, justified my expectation.

This same method of using the depressed plaster, instead of pads was employed with excellent results in two cases of Colles' fracture at the Hospital; but, as this is a fracture which, after impaction has been broken up, is usually satisfactorily treated by ordinary splints, or, as some surgeons claim, by no splints at all, I do not use these cases as evidence in favor of the method here spoken of.

The plan, as carried out in the first case, was certainly highly satisfactory, and I see no reason why it should not be of use in certain fractures in other parts of the body, where the fragments cannot be kept in position by the ordinary methods now in use. Dr. T. A. Deblois tells me that a modification of this method has been occasionally used in treating fractures of the nose; but at the time the cases here reported were treated, I was not aware of its ever having been previously used in any case.

One of the attractive features of this method of applying pressure is that the fracture can be reduced after the bandage has been applied, and the fingers and thumbs can thus regulate the degree and distribution of the pressure to a nicety.

It seems to me that Messrs. Wynne and Duel have suggested a new and simple expedient which may occasionally be found of great use in the treatment of certain troublesome fractures after the ordinary means have failed.

— THE BOSTON —
MEDICAL AND SURGICAL JOURNAL.

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Sample copies sent free on application.

PUBLISHED BY DAMRELL & UPHAM,

283 Washington St., Boston.

